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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,138	04/15/2004	Kei MURAYAMA	040170	3137

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EXAMINER
ABRAMOWITZ, HOWARD E

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 05/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/709,138	MURAYAMA, KEI	
	Examiner	Art Unit	
	Howard E. Abramowitz	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendments filed 3/14/06, have been fully considered and reviewed by the examiner. The examiner notes that claims 1, 2, 3 and 5 are amended, claims 10 and 11 have been added. Currently claims 1-11 are pending in this application.

Response to Arguments

Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In claim 9 a protection film is described, however the limitation of the use of a protection film has been removed from independent claim 1. Accordingly one of ordinary skill would not be enabled to choose a protection film as there is no protection film present in the method of claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller (US Patent No. 4,668,533).

Referring to claim 2, Miller discloses a method of plating, comprising preparing a substrate, that can be the active integrated circuit (column 3 lines 25-33) this would inherently be an insultating body with a conductive pattern formed thereon, a catalytic material is selectively applied only onto the active integrated circuit, this would be only the metal area of the substrate (column 2 lines 29-53). This was then followed by electroless plating where the plating only occurs on the patterned areas.

Referring to claim 6, the catalytic material is applied using an inkjet method (column 2 lines 29-53).

Referring to claim 8, the catalytic layer can be palladium and the electrolessly deposited layer can be copper (column 3 lines 1-13, example 1)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-5, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (US Patent No. 5,167,992) in view of Miller.

Referring to claim 1, Lin et al discloses an electroless plating method comprising the steps of adhering a catalytic metal serving as a catalyst of an electroless plating onto both the insulating body and the conductive pattern of a substrate (columns 3-4 lines 62-8) coating the catalytic surface with an oxidizing agent and forming an electroless plating over the surface (columns 3-4 lines 62-8). It does not disclose that the oxidizing agent should be selectively applied to the substrate in the areas S between the conductive pattern but rather discloses coating the whole substrate with the deactivator which then in turn only deactivates the nonconductive surface of the substrate. However, Miller et al. discloses ink jet printing as a method of depositing catalytic material for electroless printing as well as many other practical applications for ink jet printing (columns 1 and 2). While depositing an oxidizing agent is not specifically taught by Miller ink jet printing in the field of forming printed circuit boards is disclosed. One of ordinary skill would have found it obvious that the oxidizing agent would deactivate some of the catalyst deposited on the metal and it would be desirable to maximize the use of the catalyst to do so preventing contact of the oxidizing agent with the conductive pattern. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the deactivator using an inkjet printing method as suggested by Miller as such methods are commonly used to deposit pretreatment materials for electroless deposition on PCB's.

Referring to claim 3, Miller teaches that ink jet printing is a suitable method to deposit the oxidizing agent as discussed above.

Referring to claim 4, Lin et al. the step of adhering the catalytic metal onto the insulating body and the conductive pattern comprises dipping the substrate into the solution and the ions adhere by an oxidation reduction reaction which inherently occurs (column 5 lines 49-60).

Referring to claim 5, it would have been obvious to one of ordinary skill in the art that the PCB would have a conductive pattern with a plurality of different dimensions, and to make the oxidizing agent cover the insulating area between the conductive patterns. Since covering the metal surface is undesirable it would have been obvious to make the oxidizing agent cover selective portions which are smaller than a predetermined dimensions.

Referring to claim 7, Lin discloses that the catalytic material is preferably palladium and that the electroless material is preferably nickel (column 5 lines 49-60, column 6 lines 32-41).

Referring to claim 10, Lin discloses that the oxidizing agent can be a H_2SO_4 (column 7 lines 26-31).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Svedberg et al. (US Patent No. 6,194,032) in view of Drotar et al. (US Patent No. (3,573,973).

Referring to claim 11, Svedberg et al. discloses coating an aluminum nitride (insulator) substrate with a refractory metal (conductive) in a patterned form and selectively electrolessly plating the refractory metal with Nickel. It does not give details as to the method of the electroless deposition (columns 10-11 lines 55-11). However, Drotar et al. teaches a method for selectively applying a Nickel coating onto a substrate by the given method, including, adhering a catalyst to the entire surface (column 4 lines 10-22), forming a protective film over the parts of the film to be left uncovered (column 4 lines 35-45), and forming selectively a metal layer over the desired pattern by electroless plating columns 4-5 lines 71-5). The use of this method is desirable because it decreases processing time and increases the adhesion of the circuitry to the circuit boards. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Svedberg et al. to use the method of Drotar et al. with an expectation that the processing time will be decreased and that the adhesion of the circuitry will be increased.

Svedberg et al. discloses forming patterns such as a plane, a pad, an island, a street or others (which would compose a plurality of different dimensions) (column 10 lines 55-67). It would have been obvious to one of ordinary skill in the art to place the protective film in a space between the conductive patterns and have the protective film be smaller than the dimensions of the patterned conductive region.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard E. Abramowitz whose telephone number is 571-272-8557. The examiner can normally be reached on monday-friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HEA

TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER